



UNITED STATES DEPARTMENT OF COMMERCE
Pat nt and Trademark Offic

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/435,113 11/05/99 MCDANIEL

M 33815US

EXAMINER

IM22/0131

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PASTERCZYK, J

ART UNIT

PAPER NUMBER

1755

DATE MAILED:

01/31/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/435,113

Applicant(s)
McDaniel et al.

Examiner
J. Pasterczyk

Group Art Unit
1755



☒ Responsive to communication(s) filed on Nov 5, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-29 is/are pending in the application.

Of the above, claim(s) 20-29 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-19 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☒ Claims 1-29 are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-19, drawn to olefin polymerization catalysts, classified in class 502, subclass 113.
- II. Claims 20-29, drawn to olefin polymerization processes, classified in class 526, subclass 88.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the process for using the product as claimed can be practiced with another materially different product, such as a metallocene catalyst or a purely Ziegler-Natta catalyst.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Linda Jolly, Esq., on 12/5/00, a provisional election was made with traverse to prosecute the invention of group I, claims 1-19. Affirmation of this election must be made by applicant in replying to this Office action. Claims 20-29 are

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withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

6. Use of the term "system" is noted throughout the specification and claims. The term will be taken to mean the 35 USC 101 statutory class of invention "composition of matter" unless applicants clearly amend both specification and claims to reflect another class of invention.

7. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, l. 3, it is not clear what makes a support of the "silica-titania type", hence "type" should be cancelled. In b), boron is not a metal, although the earlier recitation requires a metal alkyl; in the penultimate line, insert a comma after "thereof".

In claim 2, change "silica" to --a silicon--.

In claim 4, change "ambient" to --atmosphere--.

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In claim 7, the recitation that the cocatalyst is both an alkyl lithium and a trihydrocarbyl lithium is prolix as well as confusing since it is not clear what is meant by a trihydrocarbyl lithium; does it have a tertiary carbon atom?

In claim 8, an alkyl lithium with only one carbon atom cannot be a trihydrocarbyl lithium, nor can the carbon atom be tertiary.

In claim 9, it is not at all clear what the structures of the compounds listed would be since they all seem to exceed the oxidation state of lithium.

At the end of claim 10 insert --made using said catalyst composition--.

In claim 11, "active chromium catalyst component" lacks antecedent basis and definition.

In claim 12, boron is not a metal, hence it cannot be a metal alkyl, insert a comma after "thereof" in the penultimate line, and those last four words seem to be in error.

In claim 17, boron is not a metal.

In claim 19, it is not clear what makes something of the "silica-titania type", boron is not a metal, a comma should be inserted after the first "thereof" in l. 7, and the meaning of the last two lines is unclear.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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9. Claims 1-4 and 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Konrad et al., USP 4,845,176 (hereafter referred to as Konrad).

Konrad discloses the invention as claimed (abstract; col. 1, l. 14-26, l. 47-50; col. 2, l. 5-7, l. 17-38; col. 3, l. 30-41; col. 4, l. 66-68; col. 7, l. 25-26).

10. Claims 1-4, 12, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Witt, USP 3,947,433 (hereafter referred to as Witt).

Witt discloses the invention as claimed (abstract; col. 1, l. 36-40, l. 60-65; col. 2, l. 10-43; col. 3, l. 9-16; col. 5, l. 20-22; example II).

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of Witt or Konrad in view of Schulze, USP 4,180,481 (hereafter referred to as Schulze).

The disclosures of Konrad and Witt have been discussed above.

Neither primary reference discloses reduction of the chromium catalyst with carbon monoxide.

However, Schulze teaches that in chromium catalysts it is conventional to reduce them in such a manner (abstract).

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It would have been obvious to one of ordinary skill in the art to apply the skill of Schulze to the disclosures of either of Witt or Konrad with a reasonable expectation of obtaining a highly-useful olefin polymerization catalyst with the expected benefit of not needing a purification step for the polyolefins produced.

13. Claims 1-6 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of Witt or Konrad in view of Benham et al., USP 5,237,025 (hereafter referred to as Benham).

The disclosures of Konrad and Witt have been discussed above.

Neither reference discloses reduction of its catalyst or incorporation of a further Ziegler-Natta catalyst into the composition.

However, Benham teaches that reduction of chromium catalysts with CO is conventional (col. 2, l. 32), and that mixing chromium catalysts with Ziegler-Natta catalysts is also conventional (abstract; col. 2, l. 11-40).

It would have been obvious to one of ordinary skill in the art to apply the teaching of Benham to the disclosures of either of Konrad or Witt with a reasonable expectation of obtaining a highly-useful olefin polymerization catalyst with the expected benefit of being able to control various physical parameters of the polyolefin made.

14. Claims 1-4, 12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of Konrad or Witt in view of McDaniel et al., USP 5,032,651 (hereafter referred to as McDaniel).

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The disclosures of Witt and Konrad have been discussed above.

The primary references lack disclosure of using trialkylaluminum compounds as cocatalysts with the chromium catalysts.

However, McDaniel teaches that trialkylaluminum compounds are conventionally used with chromium catalysts (col. 7, l. 12-26).

It would have been obvious to one of ordinary skill in the art to apply the teaching of McDaniel to the disclosure of Witt or Konrad with a reasonable expectation of obtaining a highly-useful olefin polymerization catalyst with the expected benefit of the polyolefin having increased crack resistance.


15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The other prior art discloses further aspects of chromium catalysts.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Pasterczyk whose telephone number is (703) 308-3497. Our fax number is 305-5433.



J. Pasterczyk

January 27, 2001



Mark L. Bell
Supervisory Patent Examiner
Technology Center 1700